

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE (DO/EO/US)

In re: Ammann et al.

Serial No: TO BE ASSIGNED

Filing Date: CONCURRENTLY HEREWITH

For: DEVICE COMPRISING AN ELECTRICAL CIRCUIT CARRIED BY A  
CARRIER ELEMENT AND METHOD FOR THE MANUFACTURE OF  
SUCH A DEVICE

October 31, 2001

BOX PATENT APPLICATION

Commissioner for Patents

Washington, DC 20231

**PRELIMINARY AMENDMENT**

Sir:

Please amend the above-referenced application as follows. Attached hereto is a marked-up version of the changes made to the specification including the claims by the current amendment. The marked-up version of the changes is captioned "**Version With Markings To Show Changes Made.**"

IN THE SPECIFICATION:

On page 1, at line 3 (after the title), please insert the following text:

-- RELATED APPLICATIONS

The present application claims priority from German Application No. 100 54 541.6 filed on November 3, 2000, which is hereby incorporated by reference in its entirety. --

On page 6, at lines 29-32, please replace the last paragraph with the following:

-- The foregoing is illustrative of the present invention and is not to be construed as limiting thereof. Although a few exemplary embodiments of this invention have been described, those skilled in the art will readily appreciate that many modifications are possible in the exemplary embodiments without materially departing from the novel teachings and advantages of this invention. Accordingly, all such modifications are intended to be included within the scope of this invention as defined in the claims. In the claims, means-plus-function clauses are intended to

cover the structures described herein as performing the recited function and not only structural equivalents but also equivalent structures. Therefore, it is to be understood that the foregoing is illustrative of the present invention and is not to be construed as limited to the specific embodiments disclosed, and that modifications to the disclosed embodiments, as well as other embodiments, are intended to be included within the scope of the appended claims. The invention is defined by the following claims, with equivalents of the claims to be included therein.--

IN THE ABSTRACT:

Please replace the Abstract at page 11 with the following Abstract:

Device Comprising an Electrical Circuit Carried by a Carrier Element  
and Method for the Manufacture of Such a Device

Abstract of the Invention

Devices are provided including an electrical circuit carried by a carrier element, an electrically conductive structure being provided on a surface of the carrier element. One or more components of the electrical circuit are arranged on the side of the electrically conductive structure facing the carrier element. Methods of producing such devices are provided including application of the electrically conductive structure to a temporary substrate, mounting of further components of the electrical circuit on the electrically conductive structure, application of a composition forming the carrier element to the side of the temporary substrate carrying the circuit parts, and removal of the temporary structure.

IN THE CLAIMS:

Please amend Claims 1-3, 9-11, 13-18, 20 and 22 to the form set forth below:

1. (Amended) A device comprising an electrical circuit carried by a carrier element, an electrically conductive structure being provided on a surface of the carrier element, wherein one or more further components of the electrical circuit are arranged on a side of the electrically conductive structure facing the carrier element.

2. (Amended) A device according to claim 1, wherein the carrier element comprises a plastic material.

3. (Amended) A device according to claim 1, wherein the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element are at least partly embedded in the carrier element.

9. (Amended) A device according to claim 1, wherein components of the electrical circuit are also arranged on a side of the electrically conductive structure remote from the carrier element, said components on the side of the electrically conductive structure remote from the carrier element being adhesively secured or soldered on said structure.

10. (Amended) A device according to claim 1, wherein the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element comprise active or passive components.

11. (Amended) A device according to claim 1, wherein the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element comprise one or more connecting devices for electrical connection of the arrangement to other components of the system containing the arrangement.

13. (Amended) A device according to claim 1, wherein the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element are elements designed for surface mounting.

14. (Amended) A method for manufacture of a device having an electrical circuit carried by a carrier element and having an electrically conductive structure

provided on a surface of the carrier element as a component of the electrical circuit, the method comprising the steps of:

- a) applying the electrically conductive structure to a side of a temporary substrate,
- b) mounting further components of the electrical circuit on the electrically conductive structure the further components being positioned on a side of the electrically conductive structure opposite from the temporary substrate,
- c) applying a composition forming the carrier element to the side of the temporary substrate, having the applied electrically conductive structure and
- d) removing the temporary substrate.

15. (Amended) A method according to claim 4, wherein applying the electrically conductive structure to the side of the temporary substrate comprises applying a single-layer or multi-layer thin-film structure to the temporary structure.

16. (Amended) A method according to claim 14, wherein applying the electrically conductive structure to the side of the temporary substrate comprises applying a single-layer or multi-layer thick-film structure to the temporary substrate.

17. (Amended) A method according to claim 14, wherein applying the electrically conductive structure to the side of the temporary substrate comprises applying one or more single-layer or multi-layer electrically conductive films to the temporary substrate.

18. (Amended) A method according to claim 14, wherein applying the electrically conductive structure to the side of the temporary substrate is effected such that the layer structure of the electrically conductive structure is opposite to the layer structure of the electrically conductive structure present in the finished arrangement on the carrier element.

20. (Amended) A method according to claim 14, wherein applying the composition forming the carrier element is effected by casting or injection-moulding plastics material at least partly around the further components of the electrical circuit.

22. (Amended) A method according to claim 14, wherein after removing the temporary substrate additional components of the electrical circuit are mounted on a side of the electrically conductive structure remote from the carrier element.

Please add the following new claims.

23. (New) The device of Claim 9 wherein the components on the side of the electrically conductive structure remote from the carrier element are adhesively secured or soldered on the electrically conductive structure.

24. (New) The device of Claim 10 wherein the active or passive components comprise at least one semiconductor chip.

25. (New) The device of Claim 11 wherein the connecting devices comprise at least one electrical connector.

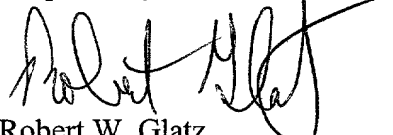
26. (New) The device of Claim 13 wherein the elements designed for surface mounting are soldered or adhesively secured to the side of the electrically conductive structure facing the carrier element.

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**REMARKS**

Please enter this amendment prior to the calculation of the filing fee. The above amendments are made to place the specification, including the claims, in a form consistent with United States practice.

Respectfully submitted,



Robert W. Glatz  
Registration No. 36,811

**Customer Number:**



**20792**

PATENT TRADEMARK OFFICE

**CERTIFICATE OF EXPRESS MAILING**

"Express Mail" mailing label number: EL733096867US

Date of Deposit: October 31, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to BOX PATENT APPLICATION, Commissioner for Patents, Washington, DC 20231.



Michele P. McMahan

Date of Signature: October 31, 2001

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**Version With Markings to Show Changes Made**

IN THE SPECIFICATION:

On page 1, at line 3 (after the title), please insert the following text:

-- RELATED APPLICATIONS

The present application claims priority from German Application No. 100 54 541.6 filed on November 3, 2000, which is hereby incorporated by reference in its entirety. --

On page 6, at lines 29-32, please replace the last paragraph with the following:

[It will be understood by those skill in the art that the present invention is not limited to the embodiments shown and that many additions and modifications are possible without departing from the scope of the present invention as defined in the appending claims.]

-- The foregoing is illustrative of the present invention and is not to be construed as limiting thereof. Although a few exemplary embodiments of this invention have been described, those skilled in the art will readily appreciate that many modifications are possible in the exemplary embodiments without materially departing from the novel teachings and advantages of this invention. Accordingly, all such modifications are intended to be included within the scope of this invention as defined in the claims. In the claims, means-plus-function clauses are intended to cover the structures described herein as performing the recited function and not only structural equivalents but also equivalent structures. Therefore, it is to be understood that the foregoing is illustrative of the present invention and is not to be construed as limited to the specific embodiments disclosed, and that modifications to the disclosed embodiments, as well as other embodiments, are intended to be included within the scope of the appended claims. The invention is defined by the following claims, with equivalents of the claims to be included therein.--

IN THE ABSTRACT:

Please replace the Abstract at page 11 with the following Abstract:

[ABSTRACT]

Device Comprising an Electrical Circuit Carried by a Carrier Element  
and Method for the Manufacture of Such a Device

Abstract of the Invention

[A device includes] Devices are provided including an electrical circuit carried by a carrier element, an electrically conductive structure being provided on a surface of the carrier element. [In accordance with the invention the one] One or more components of the electrical circuit are arranged on the side of the electrically conductive structure facing the carrier element. Methods

[Such a device is more versatile in use and can be made more compact than is the case with conventional arrangements.

A method] of producing such devices are provided including [a device comprises the following steps:

- ] application of the electrically conductive structure to a temporary substrate,
- [-] mounting of further components of the electrical circuit on the electrically conductive structure,
- [-] application of a composition forming the carrier element to the side of the temporary substrate carrying the [said] circuit parts, and
- [-] removal of the temporary structure.

IN THE CLAIMS:

Please amend Claims 1-3, 9-11, 13-18, 20 and 22 to the form set forth below:

1. (Amended) A device comprising an electrical circuit carried by a carrier element, an electrically conductive structure being provided on a surface of the carrier element, wherein one or more further components of the electrical circuit are arranged on [the] a side of the electrically conductive structure facing the carrier element.



2. (Amended) A device according to claim 1, wherein the carrier element [consists of plastics] comprises a plastic material.

3. (Amended) A device according to claim 1, wherein the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element are [fully or] at least partly embedded in the carrier element.

9. (Amended) A device according to claim 1, wherein components of the electrical circuit are also arranged on [the] a side of the electrically conductive structure remote from the carrier element, said components [preferably] on the side of the electrically conductive structure remote from the carrier element being adhesively secured or soldered on said structure.

10. (Amended) A device according to claim 1, wherein the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element comprise active or passive components[, preferably one or more semi-conductor chips].

11. (Amended) A device according to claim 1, wherein the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element comprise one or more connecting devices for electrical connection of the arrangement to other components of the system containing the arrangement[, said connecting devices preferably comprising one or more electrical connectors].

13. (Amended) A device according to claim 1, wherein the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element are elements designed for surface mounting[, said elements preferably being elements soldered onto or adhesively secured to the side of the

electrically conductive structure facing the carrier element].

14. (Amended) A method for manufacture of a device having an electrical circuit carried by a carrier element and having an electrically conductive structure provided on a surface of the carrier element as a component of the electrical circuit, the method comprising the steps of:

- a) applying the electrically conductive structure to a side of a temporary substrate,
- b) mounting further components of the electrical circuit on the electrically conductive structure the further components being positioned on a side of the electrically conductive structure opposite from the temporary substrate,
- c) applying a composition forming the carrier element to the side of the temporary substrate [carrying the said circuit parts], having the applied electrically conductive structure and
- d) removing the temporary substrate.

15. (Amended) A method according to claim 4, wherein applying the electrically conductive structure to the side of the temporary substrate comprises applying [of] a single-layer or multi-layer thin-film structure to the temporary structure.

16. (Amended) A method according to claim 14, wherein applying the electrically conductive structure to the side of the temporary substrate comprises applying [of] a single-layer or multi-layer thick-film structure to the temporary substrate.

17. (Amended) A method according to claim 14, wherein applying the electrically conductive structure to the side of the temporary substrate comprises applying [of] one or more single-layer or multi-layer electrically conductive films to

the temporary substrate.

18. (Amended) A method according to claim 14, wherein applying the electrically conductive structure to the side of the temporary substrate is effected such that the layer structure of the electrically conductive structure is opposite to the layer structure of the electrically conductive structure present in the finished arrangement on the carrier element.

20. (Amended) A method according to claim 14, wherein applying the composition forming the carrier element is effected by casting or injection-moulding plastics material at least partly around the further components of the electrical circuit [provided on the temporary substrate].

22. (Amended) A method according to claim 14, wherein after removing the temporary substrate [further] additional components of the electrical circuit are mounted on [the] a side of the electrically conductive structure remote from the carrier element.

Please add the following new claims.

23. (New) The device of Claim 9 wherein the components on the side of the electrically conductive structure remote from the carrier element are adhesively secured or soldered on the electrically conductive structure.

24. (New) The device of Claim 10 wherein the active or passive components comprise at least one semiconductor chip.

25. (New) The device of Claim 11 wherein the connecting devices comprise at least one electrical connector.

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26. (New) The device of Claim 13 wherein the elements designed for surface mounting are soldered or adhesively secured to the side of the electrically conductive structure facing the carrier element.